FluWatch

Public Health Agency of Canada | Agence de la santé publique du Canada

September 8 to September 21, 2013 (Weeks 37 & 38)

Overall Summary

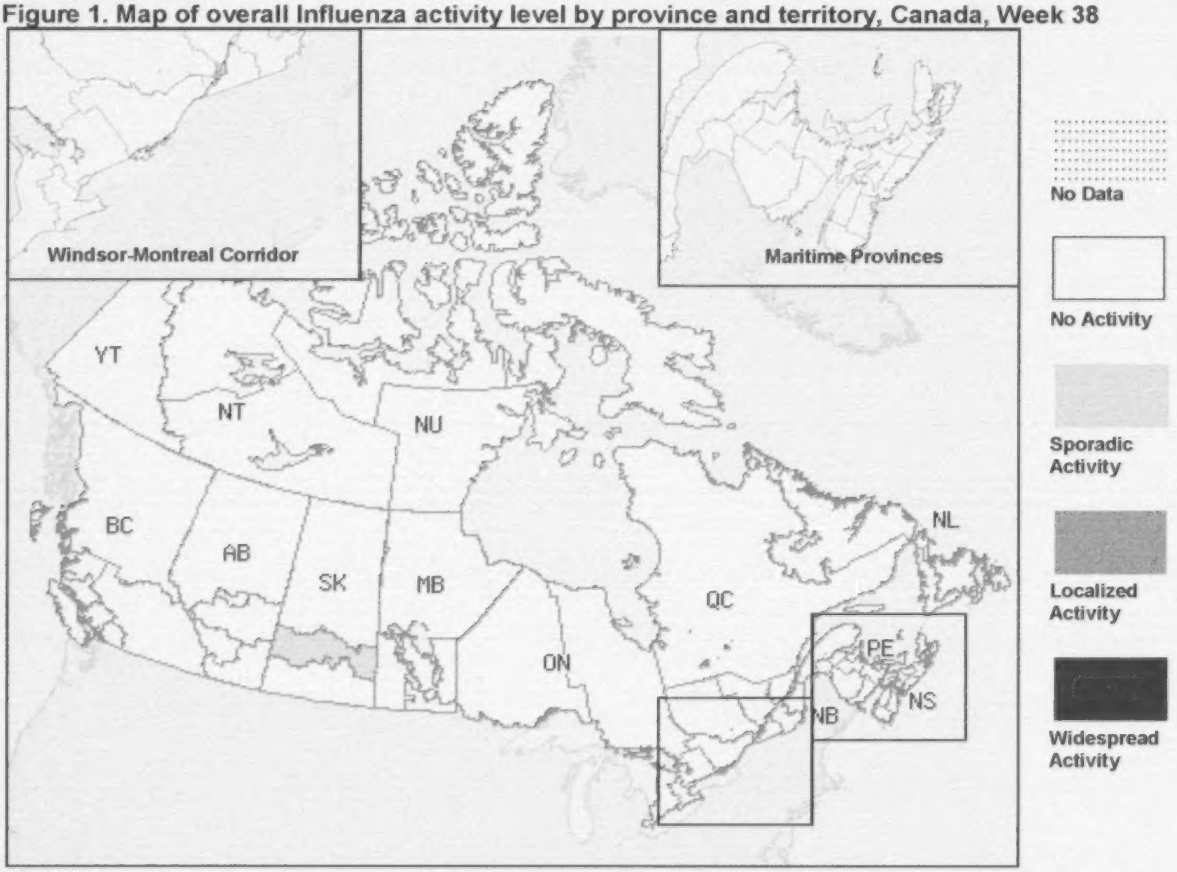
- Influenza activity in Canada remained at inter-seasonal levels during this 2-week period.
- The number of laboratory tests positive for all respiratory viruses was similar to previous weeks.
- The ILI consultation rate was stable in recent weeks, with a slight increase seen in week 38.

NOTE: Fortnightly reports will continue until October 11, 2013. Laboratory detections reported through the Respiratory Virus Detection Surveillance System and influenza activity level maps continue to be updated weekly on the FluWatch website.

Influenza Activity (geographic spread) and Outbreaks

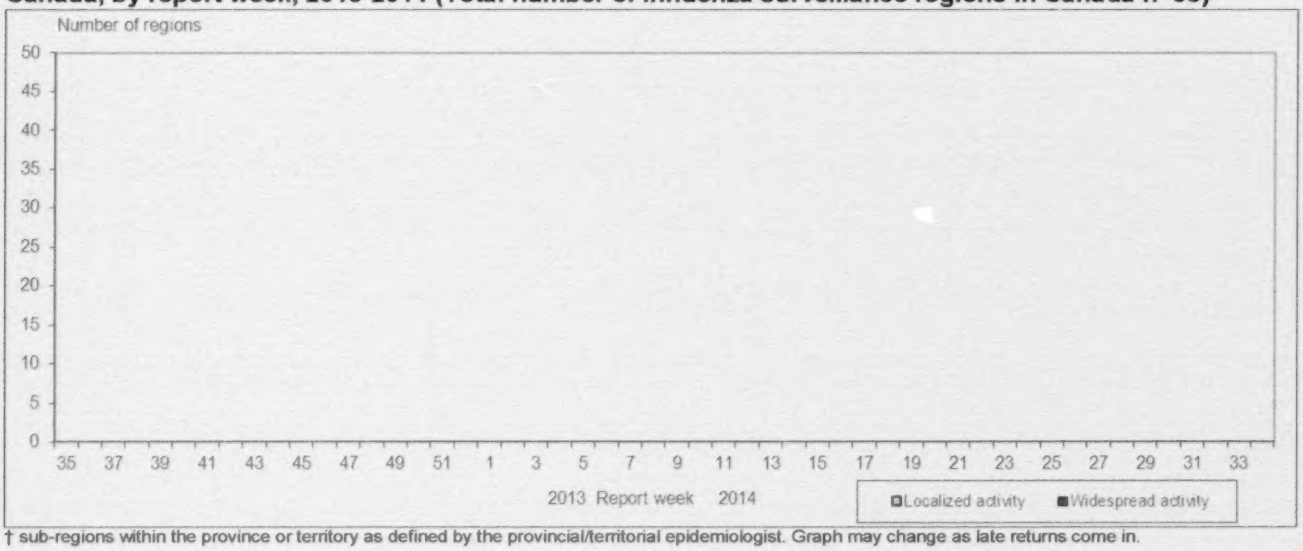
The number of regions reporting influenza activity was at inter-seasonal levels in weeks 37 and 38. During this period, four regions reported sporadic activity (Figure 1). Localized activity has not been reported since week 26 of the 2012-13 season (Figure 2). No new influenza outbreaks were reported in weeks 37 or 38. (Figure 3).

Figure 1. Map of overall Influenza activity level by province and territory, Canada, Week 38



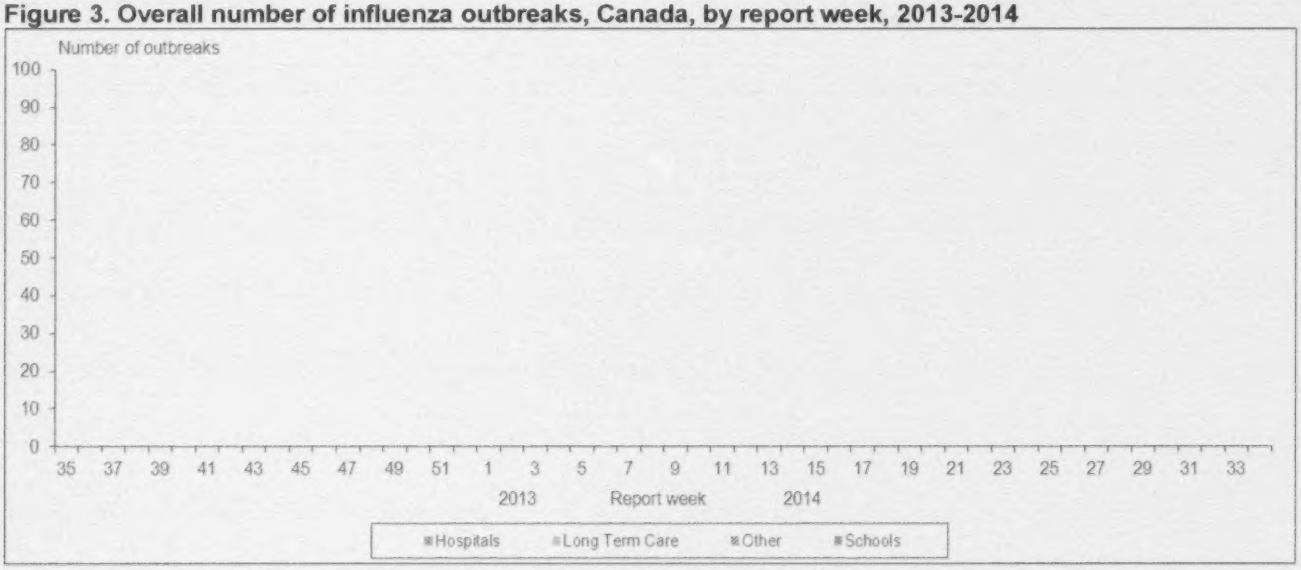
Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and reported outbreaks. Please refer to detailed definitions on the last page. For areas where no data is reported, late reports from these provinces and territories will appear on the FluWatch website.

Figure 2. Number of influenza surveillance regions† reporting widespread or localized influenza activity, Canada, by report week, 2013-2014 (Total number of influenza surveillance regions in Canada n=58)



† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

Figure 3. Overall number of influenza outbreaks, Canada, by report week, 2013-2014



Influenza and Other Respiratory Virus Detections

The overall percentage of positive influenza tests was low and stable, at 0.3% in week 37 and 0.2% in week 38. Among the seven influenza viruses detected in weeks 37 and 38, five were influenza A (Table 1). Cumulative influenza virus detections by type/subtype to date are as follows: 76.5% influenza A [7.7% A(H3), 46.2% A(H1N1)pdm09 and 45.2% A(unsubtyped)] and 23.5% influenza B (Table 1).

Detailed information on age and type/subtype has been received for 14 cases to date this season (Table 2). The proportion of cases by age group is as follows: 21.4% <5 years; 0% between 5-19 years; 7.1% between 20-44 years; 57.1% between 45-64 years; and 14.3% ≥65 years of age.

The percentage of positive tests for rhinovirus increased during this 2-week period from 23.1% in week 36 to 30.3% in week 38; the number of positive tests also increased compared to previous weeks. The percentages of positive tests for other respiratory viruses were low in week 38: parainfluenza (2.9%), human metapneumovirus (hMPV) (0.1%), respiratory syncytial virus (RSV) (0.4%), coronavirus (0.1%) and adenovirus (1.3%) (Figure 5)*.

* For more details, see the weekly Respiratory Virus Detections in Canada Report.

Table 1. Weekly and Cumulative numbers of positive influenza specimens by Provincial Laboratories, Canada, 2013-2014

Reporting provinces	Weekly (September 8 to September 21, 2013)						Cumulative (August 25 2013 to September 21, 2013)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	0	0	0	0	0	0	0	0	0	0	0	1
AB	1	0	0	1	0	1	5	0	0	5	0	1
SK	1	0	0	0	1	0	2	0	0	0	2	0
MB	0	0	0	0	0	0	0	0	0	0	0	0
ON	0	0	0	0	0	1	3	0	1	1	1	2
QC	3	0	0	0	3	0	3	0	0	0	3	0
NB	0	0	0	0	0	0	0	0	0	0	0	0
NS	0	0	0	0	0	0	0	0	0	0	0	0
PE	0	0	0	0	0	0	0	0	0	0	0	0
NL	0	0	0	0	0	0	0	0	0	0	0	0
Canada	**5**	**0**	**0**	**1**	**4**	**2**	**13**	**0**	**1**	**6**	**6**	**4**

*Unsubtyped: The specimen was typed as influenza A, but no result for subtyping was available. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Weekly data is based on week of positive lab detection. Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add up to cumulative totals.

Table 2. Weekly & Cumulative numbers of positive influenza specimens by age groups reported through case-based laboratory reporting, Canada, 2013-2014*

Age groups	Weekly (Sept. 8 to Sept. 21, 2013)					Cumulative (Aug. 25, 2013 to Sept. 21, 2013)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total
<5	1	0	0	1	0	3	0	1	2	0
5-19	0	0	0	0	0	0	0	0	0	0
20-44	0	0	0	0	1	0	0	0	0	1
45-64	2	1	0	1	1	7	6	0	1	1
65+	1	0	0	1	0	1	0	0	1	1
Unknown	0	0	0	0	0	0	0	0	0	0
Total	**4**	**1**	**0**	**3**	**2**	**11**	**6**	**1**	**4**	**3**

*Please note that this table reflects the number of specimens for which demographic information was reported. These represent a subset of all positive influenza cases reported. Delays in the reporting of data may cause data to change retrospectively.

Figure 4. Influenza tests reported and percentage of tests positive by report week, Canada, 2013-14

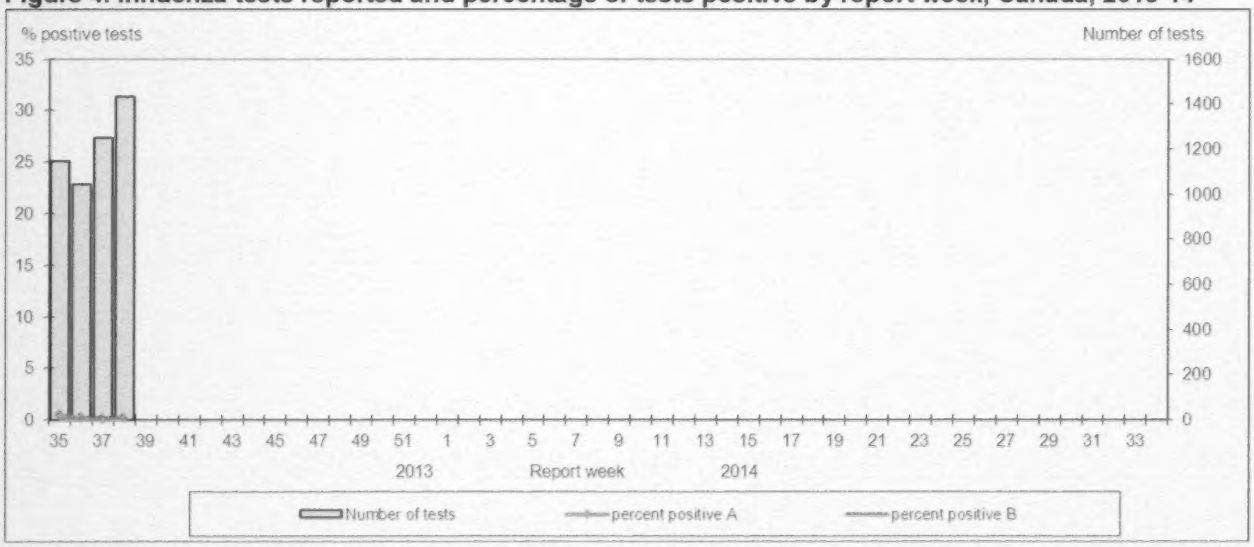
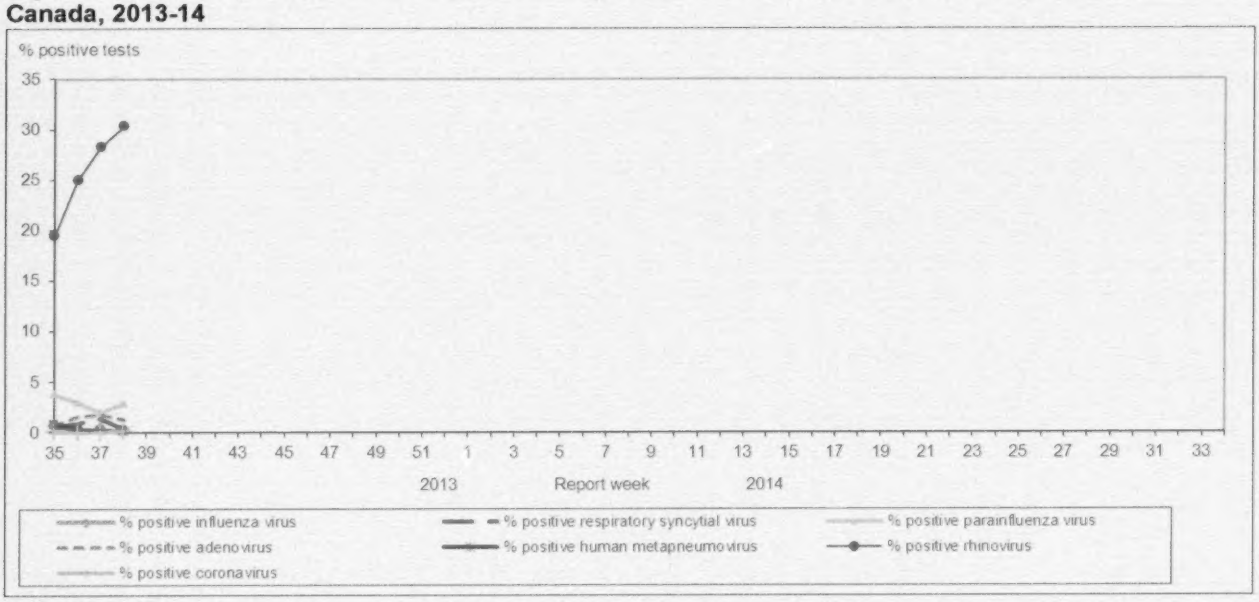


Figure 5. Percent positive influenza tests compared to other respiratory viruses, by reporting week Canada, 2013-14



Influenza Strain Characterizations

The National Microbiology Laboratory (NML) has not yet conducted antigenic characterization of influenza viruses in the 2013-14 season.

Figure 6. Influenza strain characterizations, Canada, 2013-2014, N = 0

Note: The WHO-recommended components for the 2013-2014 northern hemisphere trivalent influenza vaccine include: an A/California/7/2009 (H1N1)pdm09-like virus, an A(H3N2) virus antigenically like the cell-propagated prototype virus A/Victoria/361/2011b, and a B/Massachusetts/2/2012-like virus.

Antiviral Resistance

The NML has not yet conducted antiviral resistance testing of influenza viruses in the 2013-14 season.

Table 3. Antiviral resistance by influenza virus type and subtype, Canada, 2013-2014

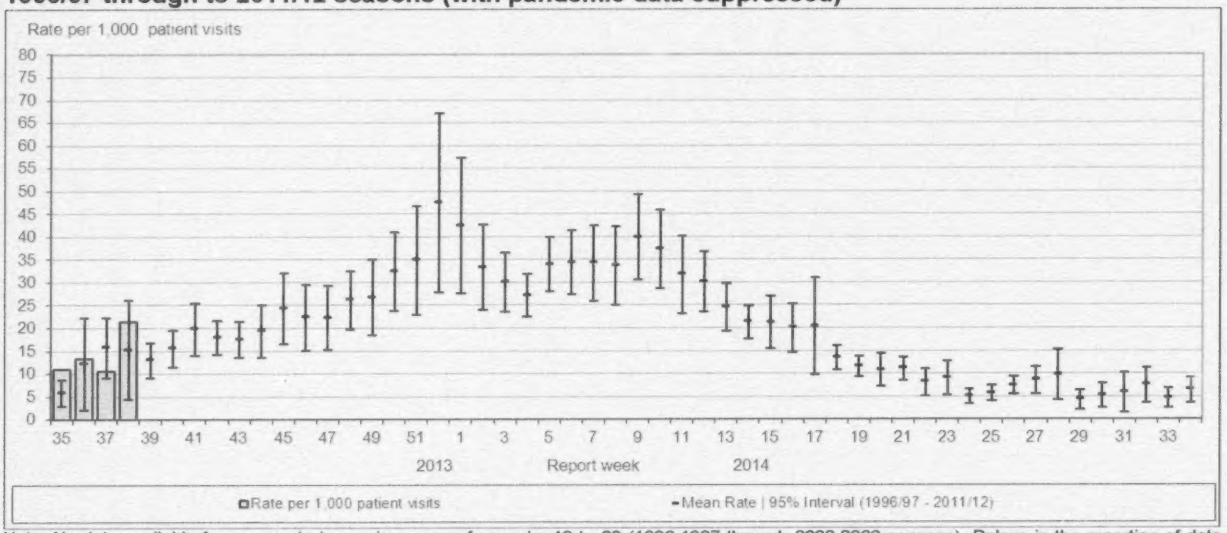
Virus type and subtype	Oseltamivir		Zanamivir		Amantadine	
	# tested	# resistant (%)	# tested	# resistant (%)	# tested	# resistant (%)
A (H3N2)	0	0	0	0	0	0
A (H1N1)	0	0	0	0	0	0
B	0	0	0	0	NA*	NA*
TOTAL	0	0	0	0	0	0

* NA – not applicable

Influenza-like Illness Consultation Rate

The national influenza-like-illness (ILI) consultation rate was similar over the past nine weeks; and was 10.5/1,000 in week 37 and increased slightly to 21.3/1,000 in week 38 (Figure 7). For three consecutive weeks since the beginning of the season, the highest consultation rate was observed in children 5-19 years of age: 25.7/1,000 visits in week 37 and 58.2/1,000 visits in week 38.

Figure 7. Influenza-like illness (ILI) consultation rates by report week, Canada, 2013-14, compared to 1996/97 through to 2011/12 seasons (with pandemic data suppressed)



Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

Severe Respiratory Illness Surveillance

Paediatric Influenza Hospitalizations and Deaths (IMPACT)
No laboratory-confirmed influenza-associated paediatric (≤16 years of age) hospitalizations have been reported in any of the 12 hospitals participating in the Immunization Monitoring Program Active (IMPACT) network in weeks 37 or 38.

Note: The number of hospitalizations reported through IMPACT represents a subset of all influenza-associated paediatric hospitalizations in Canada. Delays in the reporting of data may cause data to change retrospectively.

Adult Influenza Hospitalizations and Deaths (PCIRN)
Active surveillance of laboratory-confirmed influenza-associated adult (≥16 years of age) hospitalizations reported by the PHAC/CIHR Influenza Research Network (PCIRN) Serious Outcomes Surveillance (SOS) network concluded for the 2012-13 influenza season on April 30th, 2013. The PCIRN-SOS network continues to report limited data on laboratory-confirmed cases of influenza identified through passive surveillance, and active surveillance will start again on November 15th, 2013. No new hospitalizations, ICU admissions or deaths were reported in week 37 and no data was reported in week 38.

Note: The number of hospitalizations reported through PCIRN represents a subset of all influenza-associated adult hospitalizations in Canada. Delays in the reporting of data may cause data to change retrospectively.

Provincial/Territorial Influenza Hospitalizations and Deaths (Aggregate Surveillance System)
In weeks 37 and 38, no new laboratory-confirmed influenza-associated hospitalizations were reported from participating provinces and territories*. To date this season, two influenza-associated hospitalizations have been reported. Both cases were reported in adults 45-64 years of age. One ICU admission was reported among the two cases and no deaths were reported. The influenza-associated hospitalizations reported were influenza A (H1N1).

Note*: The number of new influenza-associated hospitalizations and deaths reported by the Aggregate Surveillance System each week may be overestimated, as it may include retrospective updates to data from Ontario for previous weeks. These data may also include cases reported by the IMPACT and PCIRN networks. Influenza-associated hospitalizations are not reported to PHAC by the following Provinces and Territory: BC, NU, QC, NS, and NB. Only hospitalizations that require intensive medical care are reported by Saskatchewan. ICU admissions are not reported in Ontario.

International Influenza Updates

Northern Hemisphere
Influenza activity in temperate regions of the northern hemisphere was at inter-seasonal levels in weeks 35 to 37. The US CDC reported a decrease in influenza detections in week 37 from week 35 and 36.
World Health Organization influenza update ***(#194)***
Centers for Disease Control and Prevention seasonal influenza report ***(wk37)***
EuroFlu weekly electronic bulletin ***(wk36)***

Tropical Regions
Asia & Africa: Influenza activity remained low in most countries in tropical Asia. Hong Kong, China Special Administrative Region, continued to observe a predominance of A(H3N2) after a switch from A(H1N1)pdm09 a few weeks earlier. Countries in Southeast Asia reported decreasing circulation of influenza A. Most countries in central Africa reported low or decreasing influenza activity, although Côte d'Ivoire, Ghana and Kenya reported continued influenza circulation.

Carribean, Central America & tropical South America: Influenza activity in Caribbean and Central America continued to decrease and appears to have come to an end. In the majority of countries still seeing activity, co-circulation of influenza A(H3N2) and A(H1N1)pdm09 was reported, with the exception of Honduras, where influenza B was circulating. In tropical South America, acute respiratory virus activity continued to decrease and co-circulation of influenza A(H1N1)pdm09 and influenza B was reported in Bolivia, Ecuador and Peru.

World Health Organization influenza update ***(#194)***
PAHO Influenza Situation Report ***(wk37)***

Southern Hemisphere
Influenza activity continued to decline in countries in South America as well as in South Africa. Activity in Oceania has been increasing in recent weeks and may be reaching its plateau.

South America – Southern Cone: Acute respiratory virus activity was within the expected level for this time of year in all countries except Paraguay where ILI activity was elevated. RSV predominated in most countries with co-circulation of influenza B and A(H3N2) in Paraguay and Uruguay. In Argentina, laboratory detections peaked in week 27, and the number of ILI reports declined and was within the expected range in week 37. In Chile, the ILI activity rate in week 37

was similar to previous weeks; RSV and influenza detections declined from weeks 29-33, rose slightly in week 34, and declined again in week 35 and 36. In Paraguay, ILI activity decreased in week 37, but influenza virus detections increased from the previous week. In Uruguay, influenza activity increased in week 37. In South and Southeast Brazil, influenza activity continued to decrease, with co-circulation of influenza A(H1N1)pdm09 and influenza B reported.

South Africa: Circulation of A(H1N1)pdm09 was reported from April to July 2013, with a peak in laboratory detections in week 23. Influenza circulation in weeks 31-34 has shifted to a predominance of A(H3N2) and influenza B, observed among both ILI and SARI cases.
South Africa Influenza surveillance report (wk34)

Australia & New Zealand: Compared to recent years, the start of the 2013 influenza season has been delayed in Australia and New Zealand. In New Zealand, consultation rates for ILI remained below the baseline level, and below the level of the previous two seasons. Laboratory detections of influenza increased in week 37 from week 36, but declined slightly in week 38. Among the 1594 influenza viruses identified between weeks 1 and 38, 43.8% were influenza B. Among the 600 subtyped influenza A viruses, 75.5% were A(H3N2). Australia has not released an updated report.
New Zealand Public Health Surveillance (wk38)
Australia Influenza Report (#06)

World Health Organization influenza update
PAHO Influenza Situation Report
WHO FluNet

Emerging Respiratory Pathogens

Human Avian Influenza
Influenza A(H7N9): No new cases of human infection with avian influenza A(H7N9) have been reported by the World Health Organization (WHO) since 11 August 2013.
PHAC – Avian influenza A(H7N9)
WHO – Avian Influenza A(H7N9)

Human Swine Influenza
Influenza A(H3N2)v: Two additional cases of human infection with variant influenza A(H3N2)v was reported from Arkansas, USA, in week 37. To date in 2013, a total of 20 A(H3N2)v cases have been reported, and one person has been hospitalized.
Centers for Disease Control and Prevention Influenza A(H3N2) Variant Virus

Middle East Respiratory Syndrome Coronavirus (MERS-CoV)
Since 13 September 2013, WHO has reported 18 additional cases of MERS-CoV infection in Saudi Arabia. The cases range in age from three to 75 years. Of the 18 cases, data was provided for eight cases. All eight are contacts of confirmed cases. Five are males and four are health care workers. Two of the cases were symptomatic and had underlying medical conditions. The remainder were asymptomatic or had mild symptoms. Four deaths were reported, with three occurring in Saudi Arabia. The fourth death was a previously laboratory-confirmed patient in Qatar. As a result of a recent update to the WHO laboratory testing recommendations, two patients, reported in Italy in June 2013 as laboratory-confirmed with MERS-CoV, have been reclassified as probable cases. As of 26 September 2013, 130 laboratory-confirmed cases of human infection with MERS-CoV have been reported, including 58 deaths. Most patients are male (63%, 77/124) and range in age from 2 to 94 years (median 50 years, n=125).

PHAC – Middle East respiratory syndrome coronavirus (MERS-CoV)
WHO – Coronavirus infections

FluWatch reports include data and information from the following sources: laboratory reports of positive influenza tests in Canada (National Microbiology Laboratory), sentinel physician reporting of influenza-like illness (ILI), provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, and outbreaks, influenza-associated paediatric and adult hospitalizations, antiviral sales in Canada, and WHO and other international reports of influenza activity.

Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU).

ILI definition for the 2013-2014 season

ILI in the general population: Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

Definitions of ILI/Influenza outbreaks for the 2013-2014 season

Schools: Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.

Hospitals and residential institutions: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case. Institutional outbreaks should be reported within 24 hours of identification. Residential institutions include but not limited to long-term care facilities (LTCF) and prisons.

Workplace: Greater than 10% absenteeism on any day which is most likely due to ILI.

Other settings: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. closed communities.

Influenza Activity Levels Definition for the 2013-2014 season

Influenza Regional Activity levels are defined as:

1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported

2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†

3 = Localized: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region**†

4 = Widespread: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring **in greater than or equal to 50% of the influenza surveillance region**†

Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.

* More than just sporadic as determined by the provincial/territorial epidemiologist.

† Influenza surveillance regions within the province or territory as defined by the provincial/territorial epidemiologist.

We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.

This report is available on the Public Health Agency website at the following address: http://www.phac-aspc.gc.ca/fluwatch/index.html. Ce rapport est disponible dans les deux langues officielles.